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RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/417,251

DATE: 10/22/1999  
TIME: 15:02:48

Input Set: I417251.RAW

This Raw Listing contains the General Information  
Section and up to first 5 pages.

ENTERED

1 <110> APPLICANT: Cahoon, Rebecca E.  
2 Miao, Guo-Hua  
3 Herrman, Rafael  
4 Rafalski, Antoni  
5 McCutchen, Bill F.  
6 <120> TITLE OF INVENTION: Plant Protein Disulfide Isomerases  
7 <130> FILE REFERENCE: BB1085 US NA  
8 <140> CURRENT APPLICATION NUMBER: US/09/417,251  
9 <141> CURRENT FILING DATE: 1999-10-13  
10 <150> EARLIER APPLICATION NUMBER: 60/049,408  
11 <151> EARLIER FILING DATE: 1998-10-15  
12 <160> NUMBER OF SEQ ID NOS: 20  
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16 <212> TYPE: DNA  
17 <213> ORGANISM: Zea mays  
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20 <222> LOCATION: (463) ✓  
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33 ggctgcctat gcctctgctg ccgactcaga tgttcatcag ctaaccaagg acaccttcga 180  
34 ggagtttgtc aagtccaaca atctcgtcct cgctgagttc tttgtccct ggtgcggtca 240  
35 ctgcaaggcc ctgcgcccg agtacgagga ggccgccaca actctcaagg agaagaacat 300  
36 caagcttgcc aagattgact gcactgagga gtccgacctc tgcaaagacc agggcgtcga 360  
37 gggttacccc accctcaagg tcttccgtgg tcttgacaat gtcactccct actctggcca 420  
38 gcgtaaggcc gctgggtatca ttctacatga ttaagagttc ctncccgng nttcatttta 480  
39 caaagggaac cctcgngggg ttaa 504  
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41 <211> LENGTH: 110  
42 <212> TYPE: PRT  
43 <213> ORGANISM: Zea mays  
44 <400> SEQUENCE: 2

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# RAW SEQUENCE LISTING PATENT APPLICATION US/09/417,251

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45 Met Ala Ala Leu Ala Ala Tyr Ala Ser Ala Ala Asp Ser Asp Val His  
46 1 5 10 15  
47 Gln Leu Thr Lys Asp Thr Phe Glu Glu Phe Val Lys Ser Asn Asn Leu  
48 20 25 30  
49 Val Leu Ala Glu Phe Phe Ala Pro Trp Cys Gly His Cys Lys Ala Leu  
50 35 40 45  
51 Ala Pro Glu Tyr Glu Glu Ala Ala Thr Thr Leu Lys Glu Lys Asn Ile  
52 50 55 60  
53 Lys Leu Ala Lys Ile Asp Cys Thr Glu Glu Ser Asp Leu Cys Lys Asp  
54 65 70 75 80  
55 Gln Gly Val Glu Gly Tyr Pro Thr Leu Lys Val Phe Arg Gly Leu Asp  
56 85 90 95  
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63 <220> FEATURE:  
64 <221> NAME/KEY: unsure  
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69 tgatggtaca cttcaaccca ctgtcaaata tgaagaaatc ccagaaaaac aagatggtcc 180  
70 agttttatgta ctctgtgggta aaaattttga atccattgtt atggatgaaa ctaaagatgt 240  
71 attagttgaa ttttatgcac catggtgtgg acattgtaaa acattagctc ccaaatacga 300  
72 tgcattaggt gaatcattca agtcaaacc caatgtcatt attgccaga ttgatgccac 360  
73 tgcaaatgat acccctgttg atattcaagg tttcccact attatctatt ggccagctaa 420  
74 taataagaaa aatccaatta catatgaagg tgaacgtact gaatcagcac ttgctgcatt 480  
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78 <212> TYPE: PRT  
79 <213> ORGANISM: Glycine max  
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82 1 5 10 15  
83 Pro Gln Ala Asn Glu Ile Thr Glu Asp Ala Leu Arg Ala His Leu Gln  
84 20 25 30  
85 Gly Tyr Val Asp Gly Thr Leu Gln Pro Thr Val Lys Ser Glu Glu Ile  
86 35 40 45  
87 Pro Glu Lys Gln Asp Gly Pro Val Tyr Val Leu Val Gly Lys Asn Phe  
88 50 55 60  
89 Glu Ser Ile Val Met Asp Glu Thr Lys Asp Val Leu Val Glu Phe Tyr  
90 65 70 75 80  
91 Ala Pro Trp Cys Gly His Cys Lys Thr Leu Ala Pro Lys Tyr Asp Ala  
92 85 90 95  
93 Leu Gly Glu Ser Phe Lys Ser Asn Pro Asn Val Ile Ile Ala Lys Ile  
94 100 105 110

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# RAW SEQUENCE LISTING PATENT APPLICATION US/09/417,251

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97      Ile Ile Tyr Trp Pro Ala Asn Asn Lys Lys Asn Pro Ile Thr Tyr Glu
98              130                      135                      140
99      Gly Glu Arg Thr Glu Ser Ala Leu Ala Ala Phe Val Arg Glu
100     145                      150                      155
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104 <213> ORGANISM: Zea mays
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108      cgtcgccgcg ggcgaggatt tcccacgcga cgggcgggtg atcgacctcg acgacagcaa      180
109      tttcgaggcg gcgctgggcg ccacgcactt tctcttcgtc gacttctacg ccccttggtg      240
110      cggccactgc aagagacttg cggccgagtt agatgaaget gcaccggtgt tgtcagggtt      300
111      gagtgagcct attgttggtg ccaaagtcaa cgctgataaa tacagaaaac tcggatcaaa      360
112      atatggagtg gatgggttcc ctaccctcat gctctttatc catggtgttc caattgaata      420
113      cactggttcg aggaaagctg accagcttgt cgcgaatctg aagaagttcg tttcgccaga      480
114      tgtttctatc cttgagtcag attctgcgat aaagaacttt gttgagaatg ctgggataag      540
115      ctttccgata ttccttggtt ttggggtgaa tgactcattg attgctgagt atggaaggaa      600
116      atacaagaaa agagcctggt ttgctgttgc taaagatttc tctgaggaca tcatggttagc      660
117      ctatgaattt gataaggttc cagcactagt tgctatccat ccaaagtata aggaacagag      720
118      tttgttctat ggcccatttg aagaaaattt cttagaagat tttgtacggc aatcccttct      780
119      ccctttggtt gtcccaatca atacagagac actaaaaatg ctgaatgatg atcagaggaa      840
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124      tgaccaagca tctcaaataa gccaattcct tgagggatac agagcaggaa gaacaacaaa      1140
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131      ctttcaattt gttctttaat ttagagctta gaaattagcc tctgcctgtg tattctggaa      1560
132      cctgccattc cagagtccat ttctgtgaaa atatatttat tattatcata ctctgtctacc      1620
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137 <212> TYPE: PRT
138 <213> ORGANISM: Zea mays
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142      Leu Leu Leu Ser Leu Ser Ala Arg Asp Thr Val Ala Ala Gly Glu Asp
143              20                      25                      30
144      Phe Pro Arg Asp Gly Arg Val Ile Asp Leu Asp Asp Ser Asn Phe Glu

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145          35          40          45
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147          50          55          60
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149          65          70          75          80
150 Pro Val Leu Ser Gly Leu Ser Glu Pro Ile Val Val Ala Lys Val Asn
151          85          90          95
152 Ala Asp Lys Tyr Arg Lys Leu Gly Ser Lys Tyr Gly Val Asp Gly Phe
153          100          105          110
154 Pro Thr Leu Met Leu Phe Ile His Gly Val Pro Ile Glu Tyr Thr Gly
155          115          120          125
156 Ser Arg Lys Ala Asp Gln Leu Val Arg Asn Leu Lys Lys Phe Val Ser
157          130          135          140
158 Pro Asp Val Ser Ile Leu Glu Ser Asp Ser Ala Ile Lys Asn Phe Val
159          145          150          155          160
160 Glu Asn Ala Gly Ile Ser Phe Pro Ile Phe Leu Gly Phe Gly Val Asn
161          165          170          175
162 Asp Ser Leu Ile Ala Glu Tyr Gly Arg Lys Tyr Lys Lys Arg Ala Trp
163          180          185          190
164 Phe Ala Val Ala Lys Asp Phe Ser Glu Asp Ile Met Val Ala Tyr Glu
165          195          200          205
166 Phe Asp Lys Val Pro Ala Leu Val Ala Ile His Pro Lys Tyr Lys Glu
167          210          215          220
168 Gln Ser Leu Phe Tyr Gly Pro Phe Glu Glu Asn Phe Leu Glu Asp Phe
169          225          230          235          240
170 Val Arg Gln Ser Leu Leu Pro Leu Val Val Pro Ile Asn Thr Glu Thr
171          245          250          255
172 Leu Lys Met Leu Asn Asp Asp Gln Arg Lys Val Val Leu Thr Ile Leu
173          260          265          270
174 Glu Asp Asp Ser Asp Glu Asn Ser Thr Gln Leu Val Lys Ile Leu Arg
175          275          280          285
176 Ser Ala Ala Asn Ala Asn Arg Asp Leu Val Phe Gly Tyr Val Gly Ile
177          290          295          300
178 Lys Gln Trp Asp Gly Phe Val Glu Thr Phe Asp Val Ser Lys Ser Ser
179          305          310          315          320
180 Gln Leu Pro Lys Leu Leu Val Trp Asp Arg Asp Glu Glu Tyr Glu Leu
181          325          330          335
182 Val Asp Gly Ser Glu Arg Leu Glu Glu Gly Asp Gln Ala Ser Gln Ile
183          340          345          350
184 Ser Gln Phe Leu Glu Gly Tyr Arg Ala Gly Arg Thr Thr Lys Lys Lys
185          355          360          365
186 Ile Thr Gly Pro Ser Phe Met Gly Phe Leu Asn Ser Leu Val Ser Leu
187          370          375          380
188 Asn Ser Leu Tyr Ile Leu Ile Phe Val Ile Ala Leu Leu Phe Val Met
189          385          390          395          400
190 Val Tyr Phe Ala Gly Gln Asp Asp Thr Pro Gln Pro Arg Arg Ile His
191          405          410          415
192 Glu Glu
193 <210> SEQ ID NO 7
194 <211> LENGTH: 1774

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RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/417,251

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196 <213> ORGANISM: Momordica charantia
197 <400> SEQUENCE: 7
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200      ggatgctgat cgggatgagt acaaggcgcc ggaggtggac gagaaggatg tcgtcgtgtt     180
201      gaaggagggt aacttcagcg atttcgtgga gaagaaccgg tttgttatgg tggagtttta     240
202      cgctccctgg tgtggtcact gccaggcgct ggcgccggag tatgctgctg ccgccactga     300
203      attgaaaggc gagaacgtgg ttttggcgaa ggttgatgcy acggaggaga atgaattgtc     360
204      gcagaagtac gacgttcaag gatttccgac tgtttatttc tttgccgatg gagtccacaa     420
205      gtcttaccct ggacagcgga ccaaggatgc tatagtaacc tggatcaaga agaagatcgg     480
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207      taaagttggt cttggttacc tgaactcctt ggtgggccct gagagcaatg agcttgctgc     600
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209      gcttttccac attgaagctt cagcaaaacy cctgccttg gtattgctta agaaggaggc     720
210      tgaaaaactg aaccgctttg atggcgagtt ttctaagtct gcaattgctg aatttgtgtt     780
211      tgccaataag cttccattag ttacaaagtt tacgagagaa agcgcaccat tgattttcga     840
212      aagttcaatt aagaaacagt tgattctatt tgcgatttca aatgattcag agaaactaat     900
213      ccccatatth gaagagtcgt cgaagtctth taaaggaaag cttattttcg tttatgtgga     960
214      aattgacaat gaagatgttg gaaagccggt atcagaatac tttggcatta gtggcaatgg    1020
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216      agttactttg gataatatta aggttttcgg agaaaatttc ttggaagaca agttaaaacc    1140
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218      agacaacttc gacaatattg ttttagatga atcgaaggat gttctcctcg agatctatgc    1260
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221      ggcgaagtcc gatggattcc caacaattct gtttttccca gctggaaaca agagctttga    1440
222      ccctatcact gtcgataccg atcgtaccgt tgtggcactg taaaaattca tcaagaaaaa    1500
223      tgcattccatc cttttcaagc tacagaagcc agtttcgagt ccgaaagccg taagtctctga    1560
224      agccaaatct ggtgatgcca aagagagccc aaagagcagc accactgacg taaaggatga    1620
225      attgtgaaga cttcttaaat agttttgtaa gttattatcc catcttttat gcactttttg    1680
226      cagctgccag attttttagac catatggaga gactagaaat taaaagaaaa tgtttttttc    1740
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230 <212> TYPE: PRT
231 <213> ORGANISM: Momordica charantia
232 <400> SEQUENCE: 8
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236      20              25              30
237      Asp Phe Ser Asp Phe Glu Asp Ser Asp Ala Asp Arg Asp Glu Tyr Lys
238      35              40              45
239      Ala Pro Glu Val Asp Glu Lys Asp Val Val Val Leu Lys Glu Gly Asn
240      50              55              60
241      Phe Ser Asp Phe Val Glu Lys Asn Arg Phe Val Met Val Glu Phe Tyr
242      65              70              75              80
243      Ala Pro Trp Cys Gly His Cys Gln Ala Leu Ala Pro Glu Tyr Ala Ala
244      85              90              95

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VERIFICATION SUMMARY  
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DATE: 10/22/1999  
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Input Set: I417251.RAW

Line ? Error/Warning

Original Text

38 W "N" or "Xaa" used: Feature required

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39 W "N" or "Xaa" used: Feature required

caaaggggaac cctcgnggggt ttaa

75 W "N" or "Xaa" used: Feature required

tgtacgtgaa aaatgggtcaa cantt